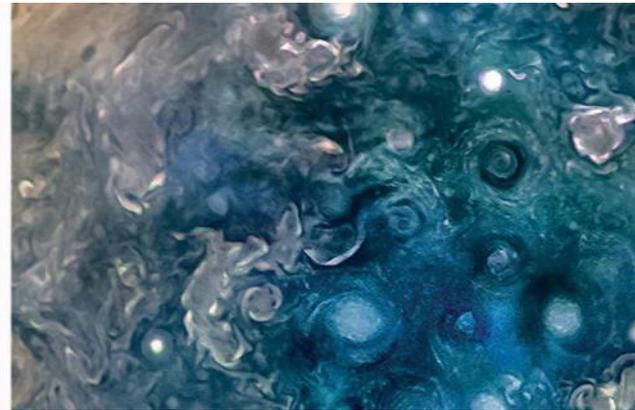


# SCIENCE

National Aeronautics and  
Space Administration



## Science Mission Directorate Class D Town Hall

**Thomas H. Zurbuchen**  
Associate Administrator

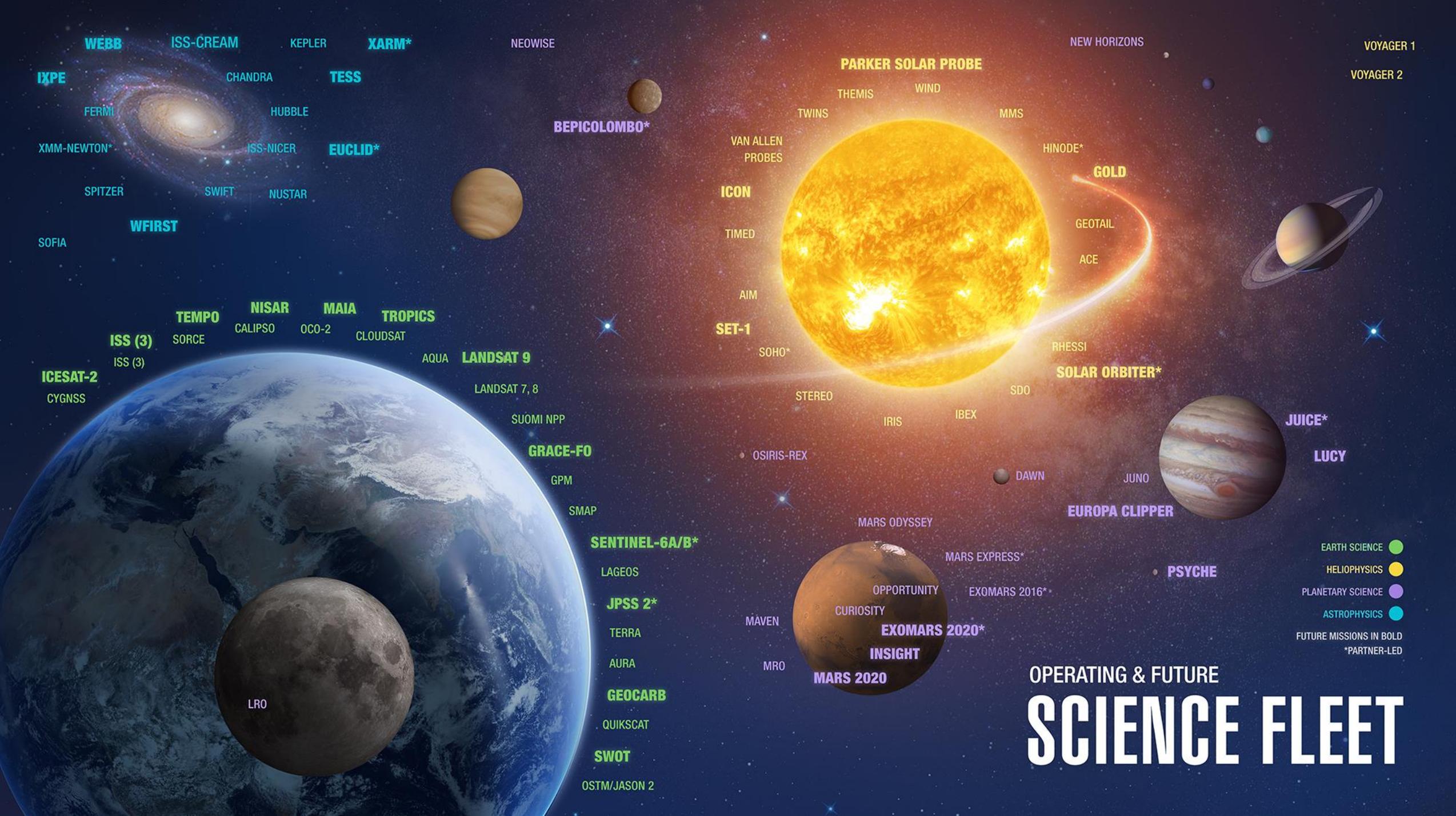
**Gregory L. Robinson**  
Deputy Associate Administrator for Programs

JANUARY 2018

# NASA Science Mission Directorate

An Integrated Program  
Enabling Great Science





**WEBB** **ISS-CREAM** KEPLER **XARM\***  
**IXPE** CHANDRA **TESS**  
FERMI HUBBLE  
XMM-NEWTON\* ISS-NICER **EUCLID\***  
SPITZER SWIFT NUSTAR  
**WFIRST**  
SOFIA

**ISS (3)** **TEMPO** **NISAR** **MAIA** **TROPICS**  
SORCE CALIPSO OCO-2 CLOUDSAT  
**ICESAT-2** ISS (3)  
CYGNSS

LRO

NEOWISE  
**BEPICOLOMBO\***



AQUA **LANDSAT 9**  
LANDSAT 7, 8  
SUOMI NPP  
**GRACE-FO**  
GPM  
SMAP  
**SENTINEL-6A/B\***  
LAGEOS  
**JPSS 2\***  
TERRA  
AURA  
**GEOCARB**  
QUIKSCAT  
**SWOT**  
OSTM/JASON 2

**PARKER SOLAR PROBE**  
THEMIS WIND  
TWINS MMS  
VAN ALLEN PROBES  
**ICON**  
TIMED  
AIM  
**SET-1**  
SOHO\*  
STEREO  
IRIS IBEX  
SDO



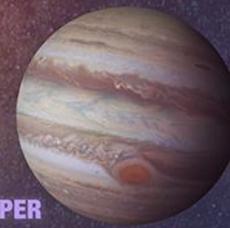
NEW HORIZONS  
VOYAGER 1  
VOYAGER 2

**GOLD**  
GEOTAIL  
ACE



RHESSI  
**SOLAR ORBITER\***

**JUICE\***  
**LUCY**  
DAWN  
JUNO  
**EUROPA CLIPPER**



OSIRIS-REX  
MARS ODYSSEY  
MARS EXPRESS\*  
EXOMARS 2016\*  
OPPORTUNITY  
EXOMARS 2020\*  
INSIGHT  
MARS 2020  
MAVEN  
MRO

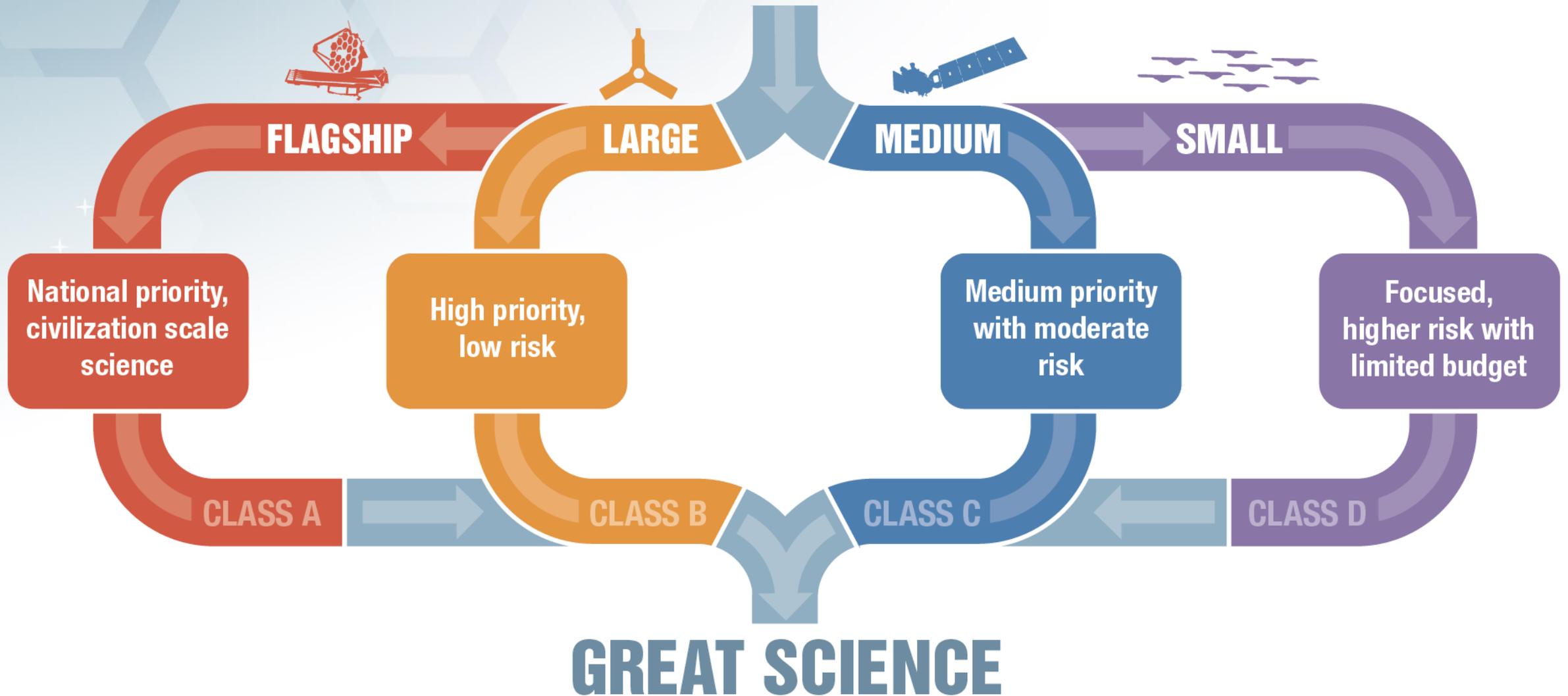


**PSYCHE**

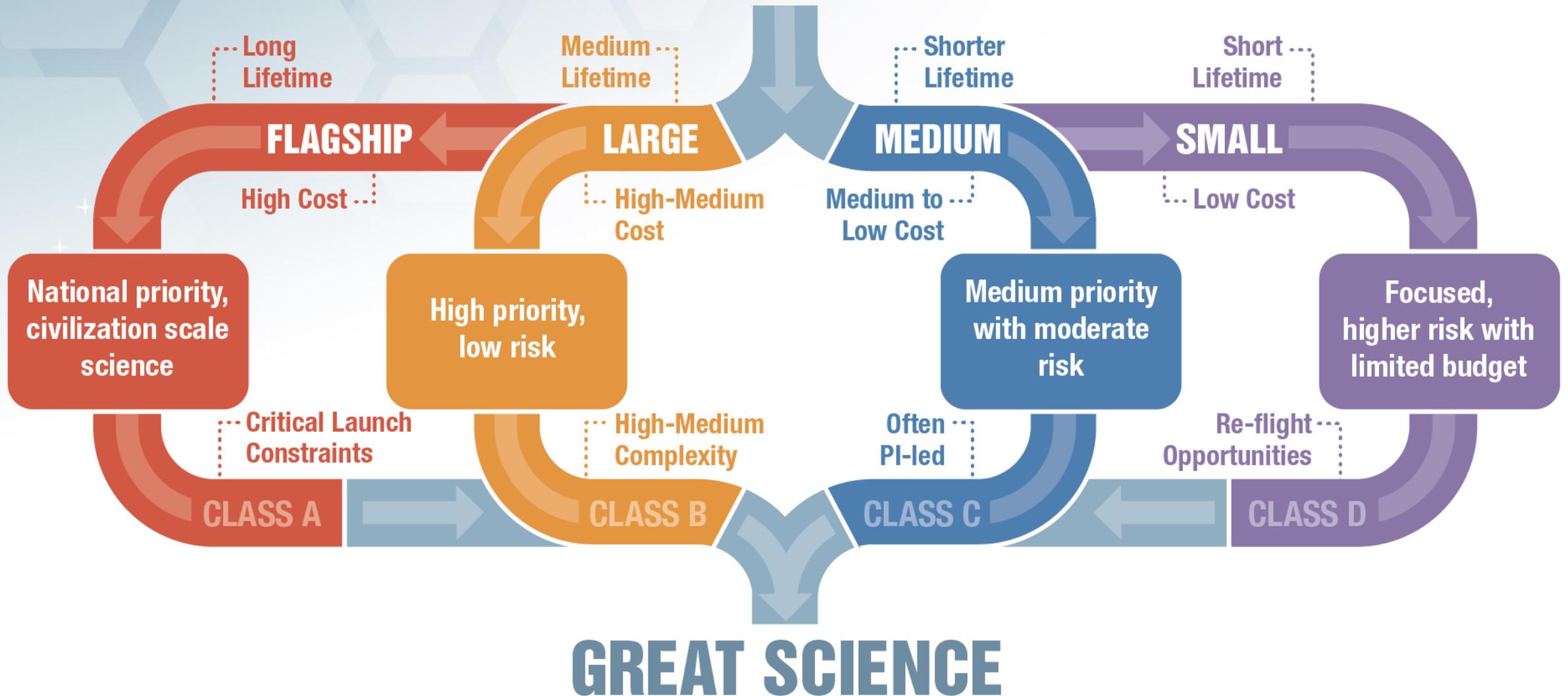
EARTH SCIENCE ●  
HELIOPHYSICS ●  
PLANETARY SCIENCE ●  
ASTROPHYSICS ●  
FUTURE MISSIONS IN BOLD  
\*PARTNER-LED

# OPERATING & FUTURE SCIENCE FLEET

# BALANCED MISSION PORTFOLIO



# BALANCED MISSION PORTFOLIO



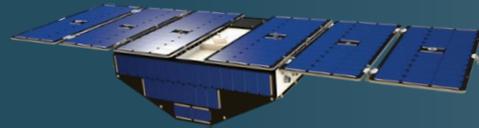
# Importance of Small, Innovative Missions

- **Expand** science programs to take advantage of small satellite rapid innovation to achieve breakthrough science
- **Enable** fast access to space with focused science measurements to fill a critical gap between large flight projects
- **Leverage** technology investments to further improve potential of science instruments
- **Partner** with commercial entities to acquire new capabilities of small satellite platforms

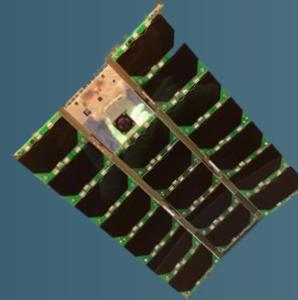
# Class D Examples

IN FLIGHT

CYGNSS



MinXSS

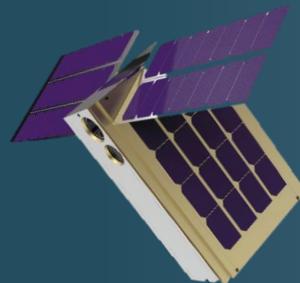


RAVAN

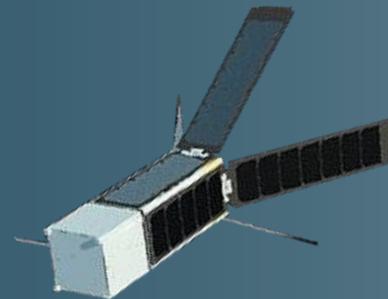


IN DEVELOPMENT

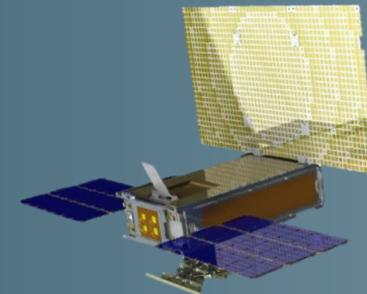
LunaH-Map



TROPICS

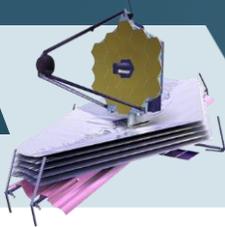


MarCO



# SMD Portfolio Defined

## CLASS A



- High priority
- Very high significance
- High complexity
- Long mission lifetime
- High cost
- Critical launch constraints
- No re-flight opportunities



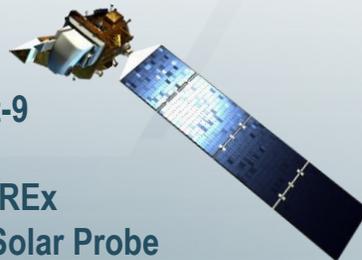
Cassini  
Webb  
Europa Clipper  
Mars 2020

## CLASS B



- High priority
- High significance
- High to medium complexity
- Medium mission lifetime
- High to medium cost
- Medium launch constraints

Juno  
Landsat-9  
InSight  
OSIRIS-REx  
Parker Solar Probe



## CLASS C

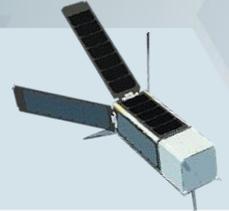


- Medium priority
- Medium significance
- Medium to low complexity
- Short mission lifetime
- Medium to low cost
- Few launch constraints



MMS  
ICESat-2  
TESS  
GRACE Follow-on  
ICON

## CLASS D



- Low priority
- Low to medium significance
- Short mission lifetime
- Medium / low complexity
- Low cost
- Few to no launch constraints
- Re-flight opportunities

CYGNSS  
NICER  
TROPICS  
GeoCarb  
ECOSTRESS



# Class D Strategy Implementation

*Accepting higher risk for scientific gain by implementing a tailored, streamlined classification approach*



# SMD Implementation Reviews



- Lifecycle Reviews conducted by project implementing institution
- Only two NASA required reviews during the Project development lifecycle
- Delegated Decision Authority
- Review Teams as small as practicable

# SMD Implementation Documentation



- Only final documentation submitted to NASA HQs for approval; no preliminary documentation
- Final Project documentation approved at the Division Director level
- Merging documentation encouraged
- Tailoring Mission Assurance Requirements (MAR), with a goal to reduce documentation deliverables and reviews

# SMD Implementation Performance Management

- Formal Earned Value Management (EVM) and a certified EVM system is not required
- NASA will develop only one NASA ICE/ISE
- KDP-C decision will be made based on 60% confidence levels, and not based on the usual 70%
- 7 Basic principles apply: Per Robert Lightfoot memo 9/26/14, AO website:

<https://soma.larc.nasa.gov/standardao/>

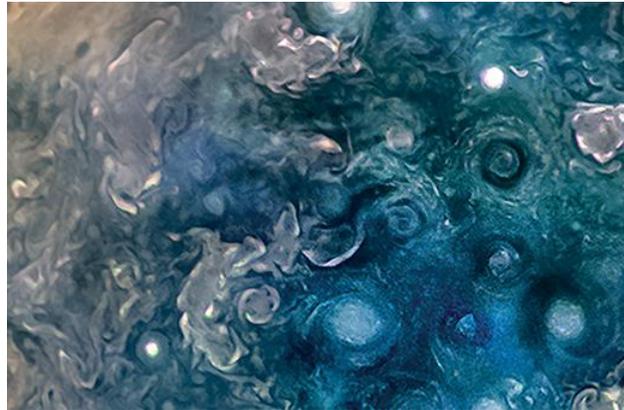
# Questions



- Information can be found at <https://soma.larc.nasa.gov/standardao/ClassD.html>
- Contact [Gregory.I.robinson@nasa.gov](mailto:Gregory.I.robinson@nasa.gov) with questions and comments

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